

## Statistical observations on hierarchies of transitivity

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### Abstract

© 2018 Walter de Gruyter GmbH, Berlin/Boston. In this paper we first test whether there is statistical support for a transitivity hierarchy viewed as an implicational hierarchy. To that end we construct data-driven transitivity hierarchies of two-place verb meanings based on the Valency Patterns Leipzig (ValPaL) database using Guttman scaling. We look at how well the hierarchies conform to strict scalarity (one-dimensionality) and, through matrix randomization, test whether their strengths are significant. We then go on to construct slightly different hierarchies based on simple counts of instances of two-participant coding frames for a given verb meaning across languages, rather than through the Guttman scaling procedure, which yields less resolution and is not designed for missing data. Finally, we assess whether the members of the hierarchies fall into semantic verb classes. The concluding section summarizes the results.

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### Keywords

Guttman scaling, implicational hierarchies, matrix randomization, semantic verb classes, transitivity hierarchy of two-place verb meanings, Valency Patterns Leipzig database

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